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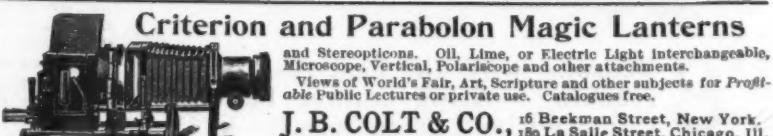
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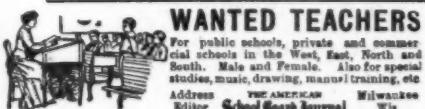
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A Weekly Journal of Education.

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For the Week Ending January 20

No. 3

Copyright, 1893, by E. L. Kellogg & Co.

The business department of THE JOURNAL is on page 75.

All letters relating to contributions should be addressed plainly, "Editors of SCHOOL JOURNAL." All letters about subscriptions should be addressed to E. L. KELLOGG & CO. Do not put editorial and business items on the same sheet.



ANY a teacher has seen a pupil who had such loveliness of character that he found himself imitating that pupil. So it is with pupils themselves ; sometimes but not always the teacher is the ideal. Somehow there should be an ideal near at hand before every young person. It is a way a teacher (now in the heavenly land) employed to have her pupils discuss each other in the light of example. "I think — does about the best of any one here," would be the utterance of some frank-hearted pupil. Then the particulars would be called for. This is character study in the concrete.

The school-room is a grand place for love. Think what love has done for the children before they enter the school-room in the morning. Ten millions have been washed and combed and brushed and clothed and fed in this country ! What a task of love ! for it has been done for love's sake. There is no monthly salary, as in the teacher's case. And what goes on after they reach the school-room must be of the same kind and prompted by the same impulse. The life of the school-room is love.

The best life is one of sacrifice. This must be an important element in the school-room. The pupil sees the sacrifice at home—the giving up of a chair ; he should see examples of it and learn to admire them in the school-room. The teacher should take notice of sacrifice and let the pupil know he appreciates each one. It should be encouraged from the fact that both are made happier ; too often it is demanded only as duty.

It is well worth a teacher's inquiry what conception a boy gets of "being good" as it is expounded to him at school. He thinks that "being good" means to be silent, gloomy, unsocial, miserable. He sees the "good boys" are the unpopular boys ; they don't like to play ; they never laugh ; they sing hymns. He likes to be liked, to play continually, to laugh, and cannot sing a hymn.

What is Nature doing for the teacher? Henry Ward Beecher says : "I believe that not only men in their social conditions and mutual influences—but that the climate, that the air, that the winds, that the light, that mountains, that stones, that water, that birds and beasts, that all things are God's ministers, his servants, and that it is through their ministration, by means of them, that he evolves the results he accomplishes."

"Poverty is not disreputable, but Ignorance is,"—is a saying of Henry Ward Beecher and one that might be put

to good use by the teacher. The one with poor clothes who hears it will feel a thrill of joy ; he is putting on and wearing the charming garments of knowledge.

"Boys," said a teacher, "here is a beautiful china plate ; it is painted with flowers just as charming as they grow. It has been and will be admired by thousands. Every one who observes flowers will be delighted to look at it. But I did not bring it in on account of its beauty. I brought it in to tell you something about its manufacture. First, it is painted, then the colors are burned in. So it is with character ; the qualities that make character must be burned in. That is done by trials and temptations. You mean to be truthful ; if you are tempted to lie, and resist, you are burning in your truthfulness."

"Strive for your ideals, and you will preserve your freshness and stand a chance to live forever. Have ideals which make you believe that the world is honest and that the mass of mankind and womankind are good and pure. Have ideals which make you believe and know that marriage is not a failure, but that the divorces and scandals that you see in the paper are like the spots on the sun. Have your ideals, and know and believe that the great mass of men holding public office in our republic, whether appointed or elected, are honest men, working according to the best of their light for the accomplishment of that which they believe best for the country. Select some ideal man or woman who shall be to you a guiding star for the future. There is one life which, in my judgment, is the most successful of any which has been lived in our times. It was a life which did not accumulate a great fortune, but it did accumulate a great fame. It was the life of a boy born in a little log cabin in the wilderness, learning to read by the light of the fire in the fireplace at night—a boy who, to support his mother, drove the horses on the tow-path of the canal and continued to read while he walked along, holding the guiding rope—a boy who fitted himself so that he entered college ; who proved to be by his diligence one of the best all-around men in the university—a boy who selected for his profession that of a teacher, and ran through the various grades so that before he was thirty he was president of a college—who heard the call to arms and enlisted—who so applied himself to the business of a soldier that he became a major-general for gallant services in the field ; who listened to the call of the country to serve her in the halls of national legislation, and there for twenty years stood as a parliamentary leader, shaping the legislation which was to bring out of chaos the country which he loved—who became United States senator and went from the senate to be president of the United State, and died a martyr's death. And that man was James A Garfield." —Chauncey M. Depew.

### "Information Lessons."

By the author of "THE COMING SCHOOL."

By this title is designated a department of instruction that has recently come into existence, born of the people's desire that their children shall be relieved of the tedium of the three Rs and furnished with some thought food from the outside world in which they are some day to take responsible places. The schools where machinery does not rule have seconded this demand with a recognition of their responsibility in this direction beyond the lines of fixed and formal curricula.

The "information lesson" is a compromise between the old and the new. It fits the transition period in which we are at present passing from a narrow to a broad, from a formal to a natural conception of education. It is one of the entering wedges, but very crudely hewn, by which Culture is working its way into the great school body, of which it will some day form the soul and substance.

While these "information lessons" still occupy a relatively high and forward feature of our school practice, let us get the best value out of them that they are capable of yielding. What is their function? How can they best subserve their purpose?

Their object is, primarily, as "information" lessons, to broaden the pupil's knowledge of this great living, pulsing world about him. Incidentally, they serve a still higher purpose, which is to afford thought material upon which the imagination, the reasoning powers, and the emotional nature of the child can grow, and grow healthily. With a view to both these values, how should they be conducted?

First, as to selection of subject: The subject should be one containing a very large known. In other words, it should be one of which the child already knows much and will be glad to learn more. It should be a subject from which strong rays of association lead out to other subjects, and these rays should be made to shine vividly, if briefly, contributing, little by little, to the general impression of the connectedness of all things, out of which is to grow some day that greatest and deepest thought, the Unity of Nature. It must be remembered that these subjects are to furnish connecting links between the pupil and the universe about him. Those should be selected, with this in view, having a strong hold at both ends—upon the child and upon the universe.

Next, as to treatment: The same things should be born in mind here. Secure the first mooring—be sure of the strong interest of the pupil in the subject, fully awakened; then secure the second—give the subject a broad attachment in externality, showing the child what will linger in his mind to aid in developing it. Suppose the subject to be the manufacture of soap:

1. What does the pupil know of this subject? (Home-made soaps; hearsay or actual observation of larger manufacture.)

2. What is the extent and intensity of his interest in it, and upon what does that interest hang? (Soap-bubbles, ablutions, household uses, carvings.)

3. What does one pupil know that another does not, and how may the telling of this be made to contribute to the general interest?

4. What is the next of kin in the great Unknown to be brought into association with the Known thus ascertained and strengthened? (The teacher must prepare herself with an extended knowledge of the subject upon which she is to give an information lesson.) Cannot the pupils' questions, if they are encouraged in an intelligent curiosity, suggest the best material to introduce new as the teacher's contribution to the general fund of information?

5. How can the subject be made to expand the mind, while filling the "knowledge box"? (Is it not better for the teacher to herself assume a modest attitude toward subjects in which she is not a specialist and to say to the class, when unable to answer some technical question, "I do not know"?) At what points and how can the pupils be led to see the action of principles

through the increased knowledge of fact which this lesson will give them? (Chemical law, etc.)

6. How can the lesson be condensed, so as to thus proceed from the Known to the Unknown by steps sure and firm without overrunning its allotted time?

7. Can any other of the day's lessons be made to do service in clinching the new Known derived from this lesson? (Composition, reading, drawing, etc.)

Rightly handled, the "information lesson" may be made an educational lever of great power.



### Nail-Biting a Mark of Degeneration.

There has just been issued in Paris a scientific treatise on onychophagie, or finger-nail biting, which contains the results of a series of observations in the public and private schools of France, and extending through a period of more than seven years. Dr. Berillon, a distinguished physician and psychologist, is the author. At the Congress of the French Association for the Advancement of Sciences held in 1886, Dr. Berillon first announced his observations on the habit of nail-biting, and since has made interesting experiments. In his thoroughly scientific treatment of the subject he has arrived at remarkable results. He pronounces the habit far more wide-spread and pernicious than it has been supposed to be heretofore. He says that if not a disease itself, it is an unfailing mark of incipient degeneration of the nervous system, which, recognized, must be treated promptly, and, unrecognized, may be productive of the most evil results.

In a mixed school the reports showed the proportion of nail-biters to be for boys 20 per cent., and for girls 52 per cent.

In a boys' school the pupils were examined with respect to age with the following results:

	Number examined.	Nail-Biters.
12 to 14 years,	18	7
13 to 15 years,	16	6
15 to 17 years,	18	3
Total,	52	16

From twelve to fourteen seems from this to be the age most susceptible to this habit. A like experiment with the girls shows them to be even more susceptible at this age.

	Number examined.	Nail-Biters.
10 to 13 years,	80	27
12 to 15 years,	75	21
15 to 16 years,	52	13
16 to 17 years,	10	2
Total,	217	63

In all the schools where the children have been observed, the reports agreed in pronouncing pupils who have the habit to be the poorest students; if boys they were inclined to effeminacy, and if girls, to slackness. In many there were marked defects of character and less sustained attention. The reports of writing masters declare their writing to be universally less legible, and less regular, and the instructors in the Parisian schools for manual training have pronounced the habitual nail-biters hardest to teach and often unfit for technical education. Pupils have been observed who showed brilliant intellectual traits, some possessing an astonishing memory, or showing exceptional adaptability to certain arts or certain special studies. Of these "infant prodigies," a large proportion were found to be nail-biters. In such cases the exceptional brilliancy was of unnatural and ephemeral growth, and vanished at the age of fourteen or fifteen.

The extraordinary development has compromised the normal development of the nervous system. In schools for children from six to eight years, those pupils cited by the teachers as incorrigible, and upon whom fell the most constant discipline, were found, almost without exception, to be addicted to the habit.

In general, the nail-biters were found to be of decided

inferiority, both from a point of view of intellectual development and from that of moral sensibility.

Having thus convinced himself of the extreme commonness of the nail-biting habit, and finding it constantly associated with evil characteristics in the child, Berillon started an exhaustive series of observations upon its nature and consequences.

He finds the number of children who have acquired the habit only after arriving at a reasonable age to be fully as great if not greater than those in whom the habit has been observed since infancy.

Its origin in them, therefore, must be explained by other hypotheses than that of continuation of primitive impulses, such as thumb-sucking, etc.

In many cases the sudden appearance of the habit may be clearly traced to imitation. Berillon finds many cases of children from 7 to 10 years of age who have never had the habit, but, placed in a new school, have been observed at the end of a month to have contracted it.

In every case several of the child's comrades were nail-biters, and the one contracting the habit was delicate and easily influenced. There has remained, however, in all his experiments a large proportion of cases which show a late contraction of the habit and one which cannot be traced to imitation. It is to these cases that most of Berillon's study has been directed. After an inquiry into the antecedents of hundreds of cases examined he has reached the conclusion that nail-biting is in most cases an indication of some hereditary physical or mental degeneration.

The hereditary degeneration is to be observed, unhappily, in more than mere nail-biting. Often the heads of such children present species of deformations, such as microcephalus (small head), bony crests, or protuberances, on different parts of the head, while the face reveals crossed eyes, nearsightedness, irregular teeth, or displacement of features.

These experiments seem to prove, that nail-biting, as a habit in children, has its source deeper than mere imitation or childish idiosyncrasy. It is shown to be no wilful habit, to be cured by ordinary punishment, but an indication of an incipient nervous degeneration.

By a series of experiments in which Berillon isolates the habit of nail-biting from other signs of degeneration, he seeks to determine the reflex effect of the habit upon the nervous system of the child in whom it is allowed to exist.

One of the most remarkable properties of the nervous system is a tendency to automatic activity. The performance of an act and its repetition increases the tendency to do it again, and in time, if yielded to, it grows irresistible.

This act is often unconscious, as is proved by the fact that it is more frequent when the attention is engaged, and there is no will to resist the automatic action. "Thus, children," says Berillon, "bite the nails while learning their lessons, or even while asleep." The tendency to automatic repetition is an indication of physical degeneration.

Upon these grounds a long series of experiments was made upon men whose occupation or employment had been such as to consist, in great part, of such automatic action; and the constant existence in them of physical degeneration points to the fact that this degeneration is increased and hastened to a great degree by this automatic repetition. This is true, however, of all nervous diseases. Hysteria, for example, increases in exact proportion to the number of crises or paroxysms of the patient, and when these are decreased in number by mere effort of the patient's will, or by hypnotic suggestion—the method now employed in the French hospitals—the disease decreases in the same measure.

It follows, then, that the nail-biting habit, so far from being harmless in the child, is most pernicious and productive of most evil results upon the nervous system, and through that upon the general health of the child. Not only in France has been recognized the commonness and the evil effects of the habit. In English schools it has been noted in a great number of cases. Instances are cited where, in classes of thirty children of parents in good circumstances, an average of fifty per cent

were observed to be nail-biters. In England, indeed, the habit is considered so harmful that in certain schools the hands of the pupils are the objects of frequent inspections, and the nail-biters are severely and publicly reprimanded.

But always, in England as well as in France, such punishments do not seem to have the desired effect. Aside from individual efforts nothing has been done in the United States to determine the extent of the evil; but it seems to us that our schools would show a much smaller proportion of nail-biters than those of either France, England, or Germany. Still there are some serious cases of "onychophagie" in almost every school and it is desirable that they should be thoroughly investigated and means devised to eradicate the evil.

### The Coming School.

(Extract from an address by C. J. H. Woodbury.)

I believe that elementary science will be generally introduced into the public schools, beginning with the primary schools and extending through the whole school curriculum, and in this connection I wish to call your attention to the work of the late Stephen Decatur Poole, a member of the Lynn school committee for many years, who in my childhood introduced the study of Hooke's *Child Book of Common Things*, and this he encouraged by visiting the schools and performing a few simple chemical experiments, illustrating some of the leading principles in chemistry. Those experiments were clearly exhibited and demonstrated in his remarkably clear and simple language, and at the time awoke the utmost enthusiasm among the children, which has, I believe, been permanent in its results, for although I was only nine years old at the time, I remember that it awoke in me a fascination for the principles of material science and produced a love for those subjects which I expect to hold in absolute fealty during the whole of my life.

I believe that the teachers will be employed with great caution after the most thorough training, and then will have a tenure of office after a long probationary period. I trust that the community will overcome the prejudice against a civil list to allow the proper pension of teachers after long continued and faithful service.

The school-houses for the younger scholars will be one story in height, with desks and seats adjustable to the form and the height of the pupils. There will be many of such buildings, so that the little ones will not have far to go, and so that the walk will not carry them over a railroad crossing. I believe that there will not be over thirty primary pupils to a teacher.

I expect to see that the school-room of the future will not contain a platform, but after the French method, the teacher's desk will be in a corner of the room. I expect that there will be many chairs to accommodate the numerous visitors who will show their respect to the teachers and their regard for their children and young friends by frequently visiting the schools, keeping in touch with the methods of instruction and encouraging both teachers and pupils by their presence.

I believe that the barn-door system of decoration of the inside of the school-room will be supplanted by suitable pictures, decorations, and works of art which will develop the taste and refine the imagination of the pupils.

I do not think that the grammar school building of the future will be over two stories in height, and that in all of the schools the utmost refinement of hygienic principles of ventilation and heating will be a matter of course rather than an exception receiving criticism.

But what will be the results of this education of the future? I believe that the grammar school will graduate children who will be able to read a newspaper intelligently and to write a letter clearly, and if that is accomplished the numerous incidental details in their train will take care of themselves. In fact, like the description of the knight in "Hudibras,"—

"He knew what's what,  
And that's as high  
As metaphysic wit can fly."

## The School Room.

JAN. 20.—NUMBER, SELF, AND EARTH.  
 JAN. 27.—PEOPLE AND DOING.  
 FEB. 3.—PRIMARY.  
 FEB. 10.—LANGUAGE, THINGS, AND ETHICS.

### Exercises In Inventional Geometry.

[These exercises are given to Third Grammar Grade, Seventh year, Second Half, in the public schools of Brooklyn.]

*The ruler, the protractor, the triangle, and the dividers may be employed in Exercises 1-30.*

1. Draw two lines so as to make four angles.  
Two lines so as to make two angles.  
Two lines so as to make one angle.
2. Draw two lines making an angle of  $30^\circ$ .  
To a vertical line draw a line making an angle of  $70^\circ$ .  
To an oblique line draw a line making an angle of  $110^\circ$ .
3. Draw two lines making two angles, one of which measures  $60^\circ$ . Mark in the adjacent angle the number of degrees it contains.  
If one of two adjacent angles measures  $80^\circ$ , how many degrees will there be in the other angle?
4. Draw two lines making two equal adjacent angles. Mark in each its contents in degrees.  
Draw two lines making four equal adjacent angles. Mark in each its contents in degrees.
5. Draw a perpendicular to a horizontal line.  
A perpendicular to a vertical line.  
A perpendicular to an oblique line.
6. Draw two lines intersecting at an angle of  $60^\circ$ . Mark in each of the other three angles its contents in degrees.  
Draw two lines intersecting at an angle of  $80^\circ$ . Mark in each of the other three angles its contents in degrees.
7. With the same center, draw three circles. Through their common center draw two lines intersecting at right angles. On every arc of each circle mark its length in degrees.  
Through the center of three concentric circles draw two lines intersecting at an angle of  $60^\circ$ . Mark on every arc of each circle its length in degrees.
8. To a horizontal line draw two perpendiculars one inch apart. Where will they meet?  
Draw two perpendiculars to a vertical line.  
Two to an oblique line.
9. By means of the ruler and the triangle, draw several perpendiculars to a line.  
By the same means, draw several oblique lines parallel to each other.
10. Draw two lines intersecting at an angle of  $40^\circ$ .  
By means of the ruler and the triangle, draw a third line parallel to one of the others. How many degrees are there in the angles formed by this line and the secant line?
11. By means of the protractor, draw several lines running in the same direction, and each making an angle of  $50^\circ$  with a vertical line. Where will the oblique lines meet?
12. By means of a ruler and a triangle, draw two parallel lines. Cut both by a line making an angle of  $65^\circ$  with the first. Mark in each of the other seven angles its contents in degrees.
13. Draw a square by means of the protractor.  
A rectangle.  
By means of the triangle, draw a square on a 3-inch oblique line.  
A rectangle 3 inches by 2 inches, the base to be an oblique line.
14. Draw a line 3 inches long. On it construct a triangle, each of the angles at the base to contain  $60^\circ$ . How many degrees are there in the third angle? How long is each of the two sides drawn?
15. Construct a triangle so that each angle at the base may contain  $70^\circ$ . How do its sides compare in length? How many degrees does the third angle contain?
16. Draw an isosceles triangle having its base vertical.  
One having its base oblique.  
One having its apex below its base.
17. Construct a triangle, so that the angles at the base may measure respectively  $50^\circ$  and  $60^\circ$ . How many degrees does the third angle contain? Opposite which angle is the longest side? Opposite which is the shortest side?
18. Draw a right-angled triangle. Draw, if possible, a triangle containing two right angles.  
Draw an obtuse-angled triangle. Draw, if possible, a triangle containing two obtuse angles.
19. Draw triangles of various forms. Find by means of the protractor the sum of the angles in each triangle.  
20. Draw a parallelogram, the sides of which measure 4 inches and 3 inches. Draw, if possible, another parallelogram of these dimensions differing in shape from the first.  
Draw a rectangle 4 by 3 inches.
- A rhomboid 4 inches by 3 inches, altitude  $2\frac{1}{2}$  inches.  
A rhomboid containing an angle of  $70^\circ$ . How many degrees does each of the other three angles contain?
21. Draw a rhombus whose side measures 3 inches.  
A 3-inch rhombus whose altitude is 2 inches.  
A 3-inch rhombus containing an angle of  $150^\circ$ .
22. Draw, if possible, three trapezoids of different shapes, the parallel sides of each measuring 3 inches and 4 inches, respectively, and the altitude in each case being  $2\frac{1}{2}$  inches.  
23. Draw a trapezium having one diagonal of 4 inches, so that perpendiculars let fall from the opposite angles to this diagonal will measure respectively 2 and 3 inches.  
Draw, if possible, a trapezium of a different shape having like the former a diagonal of 4 inches and perpendiculars measuring respectively 2 inches and 3 inches.
24. Draw a circle with a radius of  $2\frac{1}{2}$  inches, draw two radii meeting at an angle of  $60^\circ$ . Find how many degrees the intercepted arc contains.  
With dividers, mark off on the circumference as many successive arcs as possible equal to the first. Draw chords subtending these arcs. Find the length of each chord.
25. Inscribe in a circle a regular hexagon.  
An equilateral triangle.
26. Inscribe a regular octagon in a circle.  
A regular pentagon.  
A regular nonagon.
27. Divide a regular hexagon into six equilateral triangles.  
Mark in each angle of two adjacent triangles the number of degrees it contains. What angle is made by two adjacent sides of a regular hexagon.
28. On a line 2 inches long construct a regular hexagon without drawing a circle.
29. Divide a regular octagon into eight isosceles triangles.  
Mark in each angle of two adjacent triangles the number of degrees it contains. What angle is made by two adjacent sides of a regular octagon?
30. On a line 2 inches long construct a regular octagon.  
On a line 2 inches long construct an equilateral triangle.  
On a line 2 inches long construct a regular pentagon.
- The only instruments to be used in Exercises 31-60 are the ruler and the dividers.*
31. Draw two concentric circles. Two eccentric circles.  
Two circles tangent internally.  
Two circles tangent externally, having equal radii. Two having unequal radii.  
Two intersecting circles having equal radii. Two having unequal radii.
32. Draw two circles of 3 inches radius, with centers 2 inches apart. Draw radii to the points where the circumferences intersect. Connect the points of intersection.
33. Construct an isosceles triangle with a base of 2 inches, each of the equal sides to measure 3 inches.
34. Bisect a line by a perpendicular.
35. Draw two circles of 3 inches and 2 inches radius, respectively, with centers  $2\frac{1}{2}$  inches apart. Connect each center with one and the same point of intersection.  
Construct, if possible, a triangle whose sides measure 2,  $2\frac{1}{2}$ , and 3 inches, respectively.  
One whose sides measure 1,  $1\frac{1}{2}$ , and 2 inches respectively.  
One whose sides measure 1, 2, and 3 inches, respectively.  
One whose sides measure 2, 3, and 6 inches, respectively.
36. Construct a parallelogram whose sides measure 2 and  $2\frac{1}{2}$  inches.  
A parallelogram having the above dimensions, one of whose diagonals measures 3 inches.
37. Bisect a diameter of a circle by a diameter perpendicular to the first.  
Inscribe a square in a circle. Circumscribe a square.
38. Inscribe an octagon in a circle.  
39. Construct six 2-inch equilateral triangles so that they will have a common point for their apexes but will not overlap one another.  
Circumscribe a circle about them.
40. Inscribe a hexagon in a circle of 2 inches radius. Circumscribe a hexagon.
41. Draw a semicircle.  
A sextant.
42. Draw an arc of  $60^\circ$ . Draw the chord that subtends the arc. Bisect both chord and arc.
43. Draw an angle of  $60^\circ$ .  
An angle of  $30^\circ$ .  
An angle of  $15^\circ$ .  
An angle of  $120^\circ$ .
44. Draw an arc of  $30^\circ$ , and an additional arc of  $60^\circ$ .  
Draw a quadrant.
45. Draw a square, side 3 inches, using only arcs of 3 inches radius.

46. Erect a perpendicular at one end of a horizontal line without producing the line.

At one end of a vertical line.

At one end of an oblique line.

47. Bisect an angle of  $90^\circ$ .

Draw an angle of  $45^\circ$ .

An angle of  $135^\circ$ .

48. Construct a regular hexagon, side 2 inches, without drawing a circle.

A regular octagon without drawing a circle.

49. Draw an angle of about  $70^\circ$ . Construct a second angle equal to the first.

To a horizontal line draw two oblique parallel lines.

50. Draw a scalene triangle.

Draw a second triangle having each side equal in length to the corresponding side in the first triangle.

Draw a third triangle having each of two sides equal to the corresponding side in the first triangle and the included angle equal to the included angle in the first.

Draw a fourth triangle having each of two angles equal to the corresponding angle in the first triangle and the included side equal to the included side in the first.

How do the second, third, and fourth triangles compare with the first?

Draw, if possible, a fifth triangle equal to the first and having each of its angles equal to the corresponding angle in the first.

Draw, if possible, a sixth triangle greater or less than the first and having each of its angles equal to the corresponding angle of the first.

51. Draw a perpendicular to the middle point of a horizontal line.

To the middle point of a vertical line.

To the middle point of an oblique line.

Draw a perpendicular to a point in a line that is not in the middle of the line.

52. From a point outside of a line, draw two equal lines to the given line.

Draw a perpendicular from the point to the given line.

53. Draw a scalene triangle. Draw the line that measures its altitude.

54. Draw an equilateral triangle. From each vertex draw a perpendicular to the side opposite. Circumscribe a circle. Inscribe a circle.

55. Construct a 2-inch equilateral triangle. Divide it into 1-inch equilateral triangles.

How many 1-inch equilateral triangles are there in a 3-inch equilateral triangle?

Divide an isosceles triangle into four equal isosceles triangles. Into nine equal isosceles triangles.

Divide a scalene triangle into four equal triangles.

56. Bisect two unequal chords of the same circle by perpendiculars. Where do the latter meet?

57. Construct an arc of  $45^\circ$  and adjacent to it one of  $30^\circ$ .

Draw chords subtending the arcs. Draw a perpendicular through the center of each chord. Where do the perpendiculars intersect?

58. By means of a goblet, or the like, draw an arc of a circle containing about  $75^\circ$ . Without completing the circle, find its center.

59. Draw a circle, by means of a goblet, or the like, and find its center.

60. Draw a circle that shall pass through a given point.

Draw other circles, if possible, passing through the same point.

Draw a circle that shall pass through two given points. Draw more than one, if possible, passing through the same points.

Draw a circle that shall pass through three points not in the same straight line. Draw more than one, if possible, through the same points.

## Recreation.

Can you place a newspaper upon the floor in such a way that two persons can stand upon it and not be able to touch each other with their hands? Yes; by putting the paper in a doorway, one-half inside and the other half outside of the room, and closing the door over it, two persons can easily stand upon it and still be beyond each other's reach.

Can you put one of your hands where the other cannot touch it? Easily; by putting one hand on the elbow of the other arm.

Can you place a pencil on the floor in such a way that no one can jump over it? Yes; if you place it close enough to the wall of the room.

You can ask a question that no one can answer with a "no," by asking "What does y-e-s spell?"

You can go out of the room with two legs and return with six by bringing along a chair with you.

## Proportion.

I buy 4 pounds of sugar for 20 cents, and 8 pounds for 40 cents. Now, it is plain that as the 4 increased to 8, the 20 increased to 40. There is a relation between the quantity and the cost in the first case expressed by 5. The cost in the next is 5 times greater than the quantity. Will it be so if 10 pounds be bought? 15? 12?

If the quantity goes from 4 pounds to 8 pounds, the cost goes from 20 cents to 40 cents. I put it down thus:

$$4-8-20-40$$

Is this statement true? As much larger as 8 is than 4, so is 40 than 20.

Is this true? A. As much smaller as 4 is than 8, so is 20 smaller than 40. There is a relation between 4 and 8; and the same between 20 and 40. It is plain in the case:

$$4-8-20-40$$

That 8 is double of 4, and 40 double of 20, four numbers like these are usually written with dots thus:

$$4 : 8 :: 20 : 40$$

This is read: As 4 is to 8, so is 20 to 40. That is as 4 is related to 8, so is 20 related to 40.

Suppose I buy 4 pounds of sugar for 28 cents, and want the cost of 11 pounds; let me put these down thus: 4 : 11 :: 28 : —. You see I have the relation of 4 and 11, but not the relation of the fourth term, for I don't know that. Let me read it:

As 4 is to 11, so is 28 to some other number. Now, I know that this fourth term is just as much bigger than 28, as 11 is bigger than 4. Is this statement true? B. The fourth term is as much bigger than the second, as the third is bigger than the first. The fourth term is 77. The proportion is:

$$4 : 11 :: 28 : 77$$

I give you ten incomplete proportions to be completed:

$$\begin{array}{l} 8 : 16 :: 4 : ? \quad A \\ 8 : 15 :: 24 : ? \quad B \\ 8 : 24 :: 9 : ? \quad A \\ 8 : 17 :: 32 : ? \quad B \text{ etc.} \end{array}$$

Take the first proportion

$$4 : 8 :: 20 : 40$$

the end terms are called *extremes*; the middle terms, *means*. Now if I multiply the means I get 160; if I multiply the extremes I get 160. Let some one make a statement: C. "The product of the means equals the product of the extremes." Is that true of all proportions? Try the ten we just had.

$$8 : 16 :: 4 : 8$$

It is true of those ten, and so we will conclude it is true of all proportions.

Suppose I give you this incomplete proportion:

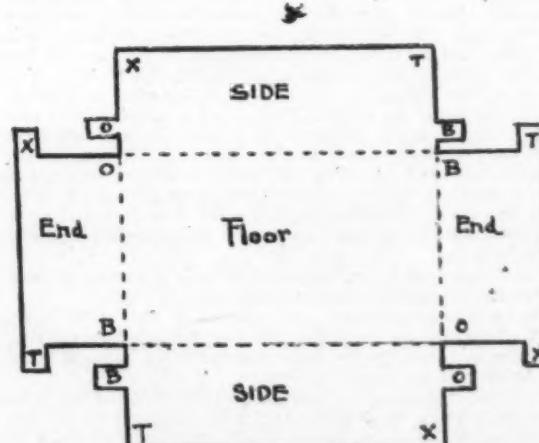
$$9 : 13 :: 7 : ?$$

You cannot apply A or B, to get the fourth term; suppose you apply C; 91 is a product, and 9 is one of the factors; what is the other? "10". Right. Here are ten incomplete proportions. Apply the rules A, B, C, as you deem best.

$$\begin{array}{l} 8 : 15 :: 24 : ? \quad B \\ 9 : 27 :: 13 : ? \quad A \\ 9 : 13 :: 16 : ? \quad C \end{array}$$

### EXAMPLES.

Many examples are solved by arranging the numbers in the form of incomplete proportions and then finding the fourth term. Here is one: John bought 11 horses for \$990, what would he pay for 17 horses?



Construction plan for wagon-box, received too late for last week's issue. See "Lessons on Common Things."

## Physical Education. VI.

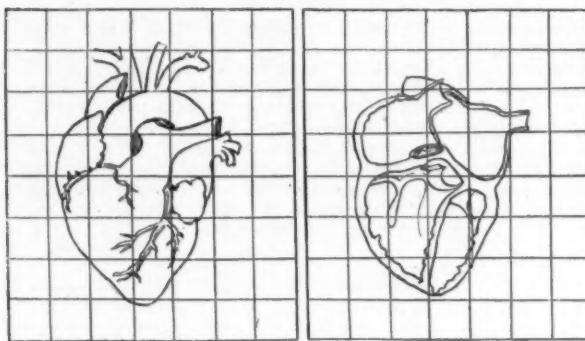
By E. B. SCARBOROUGH.

## THE HEART.

*Note.*—The teacher will need to draw some illustrations on the blackboard for pupils that have not studied anatomy. The first should be the sternum with the attachment of ribs and the outline of the heart made in red, showing behind. There should also be a diagram of the heart showing the four cavities and main blood vessels.

*To Pupils.*—Let us first understand the location of this wonderful little machine—the heart. It is situated mostly behind the sternum—a part of it is to the right of the median line of this bone and the remainder, which is more than half, is to the left.

It is shaped something like a cone, the large part, or base, lying uppermost and tipped toward the right. The apex points down and toward the left. It lies back of the lower two-thirds of the breast-bone. We feel its beat plainest at the apex, because at that point there is less bone and no lung to cover it.



This cut and that of the arm, given with the last article, can be easily reproduced on the blackboard, even by one not expert at drawing, by means of the construction lines.

The heart weighs nine or ten ounces. Its walls are muscular, and inside are four little pockets or rooms. The great blood vessels of the body open into or out of these rooms and all the blood of the body passes through them. You will see by our illustration that there are several of these streams of blood.

Some of them carry out fresh pure blood to feed the parts that have become worn out by exercise, thinking, etc.; and some of them bring back the impurities—the worn out matter—of the body. The heart keeps this stream moving.

Its walls are muscular, and contract and expand the same as your arm muscles do. When they relax the pockets of the heart open for the blood that flows into them, and when they contract the blood is pushed out with such force that you can feel it still bounding along in the artery at your wrist. Thus the heart acts very much like a pump.

This action, which we call the heart beat, occurs about seventy times per minute, day and night, as long as life lasts.

At the time of the contraction good blood is sent out all over the body from the lower left hand opening, called the left ventricle. This blood soon becomes impure in going through all the minute blood-vessels and it comes back through this large blood-vessel, which you see in the picture, to the upper chamber on the right side of the heart, called the right auricle. Here the impure blood drops down into the cavity below, through a little trap door, and when the heart contracts again the blood in this place is forced out, and this time it goes to a place to be made clean and pure. Do any of you know where that is? To be sure you do—the lungs. What, in the lungs, purifies this blood? Yes, the air, or the oxygen in the air. If we breathed in bad air, would the blood be cleansed? No, and it would go on to the hungry tissues of the body, not only unable to feed them, but really carrying them poison instead. But, we will imagine this blood has been to lungs filled with plenty of oxygen, and now it goes to the left upper side of the heart, the left auricle, drops down through another trap-door and here it is in the left ventricle from which it started, ready to go on with its bright red life to the body again.

The vessels carrying the red blood are called arteries and those containing the dark, impure blood are veins.

The coats of these vessels are muscular as well as the heart, and blood vessels are capable of being strengthened by exercise, as is also the heart, in the same manner as we strengthen our arm or leg muscles—by using them.

Since this little organ, the heart, is the fountain of all life in the body, so to speak, we cannot keep it in too good a condition. What we said in our last lesson, about cramping the lungs by compressing the thorax, applies to the heart as well, and so let us give the heart all the room it requires.

Sometimes we crowd the heart by our eating. The stomach

is situated just below the heart. If we eat improper food, or eat too hurriedly, the stomach becomes filled with gas and distended, occupying more than its share of space. It crowds up against the heart, causing pain, which is the only way the heart has of crying out against abuse.

Sometimes, in running, especially after a meal, we experience a sharp pain in the side. This is not the heart at all, as is often supposed, but is a cramp in the diaphragm. This diaphragm is a flat, thin muscle, making a partition across the trunk just below the heart and lungs. As we breathe it moves up and down, and in the hurried breathing of running there is a hurried contracting of the diaphragm and hence the cramp.

Many people die of heart failure. This means that some sudden strain has been put upon the heart which it was unable to meet. In pneumonia the right side of the heart has to pump the blood over a congested area and so is called upon to do harder work than usual. If the heart is a weak and flabby one from lack of exercise, it will fail to do this extra work, and, failing, its owner dies. If our hearts are strong and vigorous we are so much the better able to stand against disease.

It is clearly proven that the muscles of the heart and blood vessels can be developed. An athlete has a large muscular heart. The left side of the heart furnishes another proof. It has the harder work to do since it pushes the blood over the entire system and is much more muscular in consequence than the right side, which needs only strength sufficient to push the blood through the lungs.

It is well known, by those who have studied the subject, that the tissues of the body pick up nourishment better when the blood is flowing rapidly through them than when it moves sluggishly. Therefore, while all exercise taken judiciously is beneficial, such exercises as vaulting, running, and hopping, when not carried to excess are especial heart developers.

*To the Teacher.*—Precipitart work should always be followed by some quieting exercise, such as slow leg or arm work. These may be accompanied by breathing exercises. The teacher should guard against any tests of strength among nervous or weak children. Such should only take mild exercises. Trotting may be substituted for running for a weak heart.

## A Talk on Saliva.

(The teacher had noticed much gum-chewing by the girls, and spitting by the boys.)

It is very wonderful how little we know about ourselves. Now I think some one will say the heart is very wonderful and the eye is very wonderful. But do you know that what moistens the mouth is as wonderful—I call it saliva, some call it "spit" but that is not a good name.

You do not begin to know how wonderful the saliva is. You take some food in your mouth, and you chew it, and mix the saliva with it and swallow it. Well, if that saliva was not there to mix with it, you would soon suffer from sickness. Take potato, for example; it is mostly starch; before the body can handle that it must be changed into a sugary substance—this, the saliva does.

You know Mr. William E. Gladstone is the ablest man in all England. He says all food should be bitten 32 times because we have 32 teeth. He is 84 years old, I think, and yet is very vigorous, and he says one of the causes is that he chews his food so much and does not wash it down with tea, coffee, beer, milk, or water; those he swallows after eating. He knows a vast deal. He has read and studied and thought for nearly a hundred years, and yet you see he thinks three times a day about properly using his saliva.

A few days ago I visited a boy who was sick with a fever; he had pains in his bones, his mouth was dry, no saliva was there to moisten it. The cause of this was that he had eaten more rich cake than he could digest. You may think it strange but it was good he was sick. I mean if he could have eaten the rich cake, and it did not make him sick while it lay undigested he might easily kill himself. The stomach says by making him sick, "Stop eating so much rich cake," and he stops. As he gets saliva to come in his mouth he will feel better. You know the physician looks at your tongue; that is, to know what condition the coating of your stomach and mouth is; if it is covered with clean nice saliva then he knows you are well.

Now, the saliva you see is very important. If you waste it or misuse it, you will be sick. If you chew gum or tobacco, you will injure the glands that produce it. Nor should you spit as many boys do; no educated person spits unless he chews tobacco or has a cold. If you should be with educated, cultured persons you would notice they are not spitters. Uneducated persons spit frequently. All this wastes the saliva and undermines the health.

Bear in mind the two rules: Don't wash down your food, don't spit.

## Supplementary.

### A Washington Memorial Exercise.

By E. E. K.

CHARACTERS.	President James Maud Fannie Fred Bertha Jennie	Members of the Club.
		Robbie, a five-year old guest of the Club.

#### SCENE I.

(A children's club-room, decorated with flags and a picture of Washington.)

*President. (Sitting at a small stand. Strikes with something to represent a gavel. Club take seats and come to order.)*

We are going to talk this afternoon about one of the best and greatest men that ever lived, George Washington, first president of the United States. I hope all the members of our club will have something to say of this wonderful man. We will begin with his boyhood, because what a man is depends very much on what he was when a boy. I will call upon James to tell me what he knows about this part of Washington's life.

*James. (Rising and bowing to President and club.—I will not pretend to be surprised to be called upon, Miss (or Mr.) President and girls and boys, because that would be untruthful, and to think about Washington always makes me want to tell the truth, the whole truth, and nothing but the truth. I expected to be invited to speak of Washington's boyhood this afternoon, and have prepared myself as well as I knew how. I have studied up the famous hatchet story, for one thing. It is a story that never grows old, and illustrates what a great and honorable man he was as a boy. It is told in various ways, some of them funny. It has a sacredness for me, however, and I never like to hear it twisted about by the jokers. This is the true story if I have it right:*

George's father had given him a new hatchet for a birthday present. It must have been just at this time of the year that this happened. George was so delighted that he ran out to find something to chop. He did not think of his mother's woodpile, but went into the orchard. In February the trees all looked dead, and George was too excited to think of any harm he might do. He tried his hatchet again and again on the first tree he came to. This happened to be a young cherry tree that his father was taking very great care of. Before he stopped to think what he was doing he had killed it. Then he *did* think, and he felt so sorry and ashamed that he stole into the house and kept very quiet. He kept hold of the hatchet, thinking he would ask his father to give it to some better boy. At last his father came in, very angry, and asked who had done such a wicked thing. George was ashamed and afraid, and for a moment he was tempted to tell a falsehood. But he knew that would be mean and cowardly so he stood up bravely before his father, and said, "I cannot tell a lie, father, I did it with my little hatchet."

His father was surprised that George could have done such a thing, but very, very glad his son was brave enough to bear the blame of his own act, and noble enough to scorn a lie.

This story shows us the main secret of Washington's greatness. As we go on with our discussion we shall see how his character remained brave and true to the last, until, for his grand and beautiful services, he came to be called the "Father of his country." It was his mother who taught him what a grand thing truth is. And it was she who took his father's place and kept him at school, for George was only ten years old when his father died. He loved his mother so dearly that he gave up his desire to be a sailor for her sake, and stayed at home and at school, studying hard, when he would much rather have been away at sea. By denying himself in this manner he made his strong and beautiful character still stronger and more beautiful, so that when he became a man he was able to perform some of the grandest actions ever known. But some one else will tell you that part of the story. (*Sits down. Club applauds.*)

*President.—Maud has consented to tell us something of Washington's later life.*

*Maud.—It is quite an easy matter, Miss (or Mr.) President, to continue a story so nicely begun. James might have told something of Washington's business life, for he began it very early. His work was to survey the land—that is, measure different parts of the country, and tell how much was high, how much low, how much sandy, how much rocky, how much wooded, how much swampy, etc., etc., etc. Of course he could not take a tape measure and go over a large piece of country, as you might measure your back yard. It was very difficult work that he had to do, with a great deal of arithmetic in it, and he did it so well that everybody heard of his success and he was well known before he was nineteen.*

Well, there came a time when his country needed him as much as his mother had needed him, and he was as faithful to her service as he had been to his home. I will ask Jennie to help me out with this part of the story.

*Jennie.—The king of England, who was at that time king of this country, too, did some very unjust things that our people could not stand, and when complaints were made he would not pay any attention. At last our people grew tired of being so badly treated, and made up their minds to break away from England altogether. Of course the English king was not going to lose so fine a country if he could help it, so he sent large armies of soldiers over here to make the Americans obey. Our people were poor, and it was a hard battle for them, but Washington led them, and they fought themselves free. It took eight long years of fighting, and during all that time Washington was always where he was most needed. Seeing his courage, every one else was brave.*

And it was because they were so honest and determined that at last they won our freedom for us. Here is Washington himself, as he rode at the head of his army.\* When the war was over the question was who should be king in place of the English king, (who was to rule our land no more) and what our laws were to be. Again the people looked to Washington. They made him their president, and he served them eight years more, for they would not spare him when his first four years were up.

They needed his wisdom longer than that, for, though the fighting was over, there was a good deal to manage in starting a new country, with new laws and a great many difficult things to think of and do.

*Girl (Interrupting).—Then there was a King George on the other side of the ocean and a President George on this side.*

*Boy (Enthusiastically).—Yes, and our President George was worth ten times as much as all their old King Georges put together!*

*President (Striking).—Order! Maud has the floor.*

*Maud (Bowing smilingly to president and turbulent members).—My story is nearly told. Only the sad part is left. Washington, like every one else, had to die, and he died just too soon to see the beginning of this century. In less than three weeks more he might have written 1800 at the head of his letters. But he caught cold and died of a sore throat on the 14th of December, 1799. His loving wife Martha was at his bedside.*

*(A pause.)*

*Boy.—Was he an old man, then?*

*Maud.—Nearly sixty-seven years old.*

*Boy.—He ought to have lived to be older than that.*

*Maud.—Yes, he was a strong man, but a little careless about himself. He kept wet clothes on, and when he found he had caught cold he would do nothing for it.*

*(Another pause. Maud sits down slowly.)*

*Girl.—But this is his birthday we are keeping. Let's be glad.*

*Boy (Rising).—We did not clap Maud when she sat down because we were thinking sad thoughts just then. I feel, Miss, (or Mr.) President that we ought to thank her. I move a vote of thanks.*

*President.—All in favor of the motion please say "Ay!" (A vigorous response from all.) Maud will please receive the thanks of the club (smiling at Maud who inclines her head pleasantly in acknowledgment). I believe Fred knows some verses that tell how different Washington's way of living must have been from ours. Will you recite them, Fred?*

*Fred (Rising and bowing).—With pleasure, Miss (or Mr.) President. The piece is funnier than it is pretty, though. It is called "The Good Old Times," (Recites.)*

"When Washington was president

He saw full many an icicle;

But never on a railroad went,

And never rode a bicycle.

He read by no electric lamp.

Nor heard about the Yellowstone;

He never licked a postage stamp,

And never saw a telephone.

His trousers ended at the knees,

By wire he could not send despatch;

He filled his lamp with whale oil grease,

And never had a match to scratch."

But in these days it's come to pass,

All work is with such dashing done—

We've all those things; but, then, alas!

We seem to have no Washington."

*Girl.—Just think of it—no matches!*

*President.—Bertha will recite some verses that seem just the right thing to-day.*

*Bertha (Recites).—*

"Whatever you are, be brave, boys!

The liar's a coward and slave, boys!

Though clever at ruses,

\*The February PRIMARY JOURNAL will furnish pictures of Washington.

And sharp at excuses,  
He's a sneak and a pitiful knave, boys  
Whatever you are, be frank,  
'Tis better than money and rank.  
Still cleave to the right,  
Be lovers of light,  
Be open, above board, and frank, boys!  
Whatever you are, be kind, boys!  
Be gentle in manner and mind, boys!  
The man gentle in mien  
Words and temper, I ween,  
Is the gentleman truly refined, boys!"

*President.*—Of course that is all meant for the girls, too.

*Robbie.*—I know a piece about Washington!

*All.*—Let's have it, Robbie! Let's have it!

*President (Striking).*—Order, please! Let us conduct our meeting in an orderly manner. Those in favor of hearing the recitation please say, "Ay!" (*Unanimous vote.*) Robbie, you may say your piece if you will.

*Robbie.* (Steps to front and recites, shouting at the top of his voice with both hands in his pockets.)—

George Washington was good and wise,  
He never told a lie.  
Or left his daily work undone,  
Or made his mother sigh.  
Whenever he did wrong, he told,  
No matter what's to pay;  
The truth, and nothing but the truth,  
It was his honest way.  
He saved his country when a man,  
For he had grown so strong  
In mind and body, that great works  
To him were like a song.  
*I'd like to grow like Washington.*  
*Just like him, if I could;*  
*"But since I cannot be as great,*  
*I'll try to be as good."*

(*Laughter and cries of "Good for Robbie!"*)

*President.*—Yes, Robbie, we'll all try to be as good. We will close with some responsive exercises and a song. I have myself prepared this little exercise. I will read, and I think you will all know what to say when I pause. (*Reads.*) George Washington's mother taught him to speak—

(*Looks at the club.*)

*All.*—The truth, the whole truth, and nothing but the truth.

*President.*—When asked who had killed the cherry tree, little George said—

*All.*—I cannot tell a lie! I did it with my little hatchet.

*President.*—And his father exclaimed—

*All.*—I would rather lose a thousand trees than have my boy tell a lie.

*President.*—Toward his mother Washington was always—

*All.*—Loving and true.

*President.*—In his work and in his studies he was—

*All.*—Faithful and industrious.

*President.*—As a soldier he was—

*All.*—Brave and loyal.

*President.*—When the enemies of our country were beaten, his conduct toward them was—

*All.*—Polite and generous.

*President.*—As President of the United States he was—

*All.*—Thoughtful and wise.

*President.*—And always toward his duty he was—

*All.*—Courageous and self-sacrificing.

*President.*—One of the names of the land he loved so well is Columbia. Let us sing "Columbia, the Gem of the Ocean."

(All rise, arrange themselves according to size, facing the audience, and sing, waving flags to time of music.)

### Health.

Health is a rosy maiden  
That revels in fun and flowers,  
And always, blossom-laden,  
Laughs out in the darkest hours.  
She loves the cottage children  
That gambol on the lea,  
And the winsome peasant's baby,  
Asleep on its mother's knee.  
  
She touches their cheeks with cherries,  
And binds their brows with pearls.  
And pretty, though brown as berries,  
She maketh the gipsy girls.  
Without her, halls are dreary,  
And palace-gardens plain,  
And the life of a monarch weary,  
And power and riches vain.

—Anon.

### Editorial Notes.

A correspondent corrects a false impression conveyed by a statement in THE JOURNAL of December 23, to the effect that the specialty system had been adopted by the Brooklyn board of education, and made obligatory in all the schools of that city beginning with February 1, 1894. THE JOURNAL made this statement upon what it considered good authority, but it proves erroneous. We are glad to take back anything that might reflect upon Brooklyn's reputation as an intelligently progressive city, and to congratulate those Brooklyn teachers who shall be permitted to teach their children for a longer period of time than formerly. Five months is not long enough for a good teacher to have full effect upon a class of children. Half of the time now wasted in getting acquainted will be saved to teachers and children who are allowed to remain together for a year. It may prove difficult to make the little ones understand that they are "promoted," though they remain with the same teacher; but apart from a few petty difficulties such as this, the move is a wholly good one. (See letter, "A Misstatement.")

Our esteemed cotemporary, the *Popular Educator*, has a valuable article in the December number on "Exceptional Spellers." It gives an exhaustive method of studying constitutionally bad spellers, with a view to ascertaining, in each case, the cause of the failing. It would be a good thing if all teachers of English spelling could apply the tests given and then contribute their results to a general stock of data on the subject of bad spelling. The conclusions that might be derived from a careful examination of these data would be of permanent and universal benefit.

Have you a bust or a good picture of George Washington in your class-room? It is a silent, but effective teacher of patriotism.

The distress of the poor in the large cities challenges more than ever before the attention of intelligent philanthropists and among them the educators of the country hold a prominent place. Many plans have been devised to bring relief. One that strikes us as most commendable is that outlined by Professor Francis G. Peabody, of Harvard university, in a recent lecture on the "Educational Side of Charitable Work." He gave it as his conviction that the tendency of population towards the cities was the main reason why the worst conditions of poverty were to be found there. To keep the social circulation healthy he argued that an efflux must be established. To this end he proposed that colonies made up of the poor of the city should be founded in the country. In this way alone, he is convinced, the cities could be relieved of congestion. His plan was to divide the colonies into two classes, "voluntary" and "involuntary." In the former would be those who were able and willing to work, and in the latter, those who were unwilling or unable to work. Inducements should be made to keep the first class away from the cities, and some coercive measures might be used to keep the involuntary class in the colonies.

Professor Peabody advised work especially adapted for the country, as farming, etc. By this means, he said, the cities would be relieved of the extreme poor, who would be thus made self-supporting and possibly useful members of society, and the voluntary class would take care of themselves if given the chance to work. In either case the cities would be relieved. If the state legislatures would adopt some such plan they would be doing the country a great service.

A meeting of Italians was held in this city to consider the Sicilian matters. The president announced that six gentlemen would in turn address the meeting. Then there was a great hubbub.

"He say six genteelmen weel spick," the interpreter told the reporter, "an' everybody say dat too much. Dey want one man. Dey say all spickas spick d' same t'ing like, an' it take too long."

"Dey say one spicka spick plenty. Dey no gotta time listen all night. Dey want wan spicka what tell 'um all 'bout Sicilia an' datas enough."

Here is a hint for those who plan out teachers' associations.

We have just received from Col. Parker, Chapter XI. of the new *Talks on Pedagogy*. He has nearly finished chapters XII. to XVI. inclusive. As all of the first part of the book is in type, its early publication may be looked for. Bishop J. H. Vincent is preparing the introduction.

Brookline a suburb of Boston, is reported as standing first in the primary and intermediate exhibits at the World's fair.

Let every reader see that his fellow-teachers are subscribers to some of our papers during 1894. Here is the list:

THE SCHOOL JOURNAL, weekly, \$2.50 a year.  
THE PRIMARY SCHOOL JOURNAL, monthly, \$1.00 a year.  
THE TEACHERS' INSTITUTE, monthly, \$1.00 a year.  
EDUCATIONAL FOUNDATIONS, monthly, \$1.00 a year.  
OUR TIMES, monthly, 30c, a year.

Supt. Balliet writes: "I am very glad you have republished Hall's 'Contents of Children's Minds.' There ought to be many of these called for in its handy form."

The officers of the Southern Educational Association for the ensuing year are as follows: W. H. Bartholomew, Louisville, president; Frank Goodman, Nashville, secretary; R. J. Quinn, Atlanta, assistant secretary; J. M. Carlisle, Austin, treasurer.

According to the statistics of the *Charleston News and Courier* there are now in the South 25,530 negro schools where 2,250,000 negroes have learned to read and most of them to write. In the colored schools are 238,000 pupils and 20,000 negro teachers. There are 150 schools for advanced education and seven colleges administered by negro presidents and faculties.

A meeting of the cooking teachers, of New York and vicinity will be held in Room 712, United Charities building, Fourth avenue and Twenty-second street, New York city, Friday, January 19, 4 P. M. The purpose is to form an association of cooking teachers. At this meeting a committee will be appointed to nominate officers and draft a constitution. Notice will be given of the following meeting.

The new high school for Springfield, Mo., is ready for the reception of the students. It is a fine structure located in a beautiful park. The cost of the building, which has forty-five rooms, available for educational purposes, together with the enclosure which it occupies, was only \$65,000. The dedication took place Jan. 6. Prin. Hollister had charge of the exercises. Supt. J. Fairbanks has reason to be proud of the progress that Springfield schools have made in recent years.

The program of two literary societies in the public schools of Emmetsburg, Iowa, shows a degree of life that is praiseworthy. More than a year ago a literary society was organized. A constitution and by-laws were drawn up and adopted. The name Franklin was chosen. Weekly meetings were held on Friday afternoons at the beginning of the present school year; the hall could no longer contain the eager throng. They divided and now meet in contests. There are recitations, doll drills, biographies, music, debate, original poems, orations, handkerchief drill, and finally the judges' report.

An address delivered by Dr. Alfredo H. Bosque, at the opening of the academic year of the Royal university of Havana has been printed in pamphlet form. It presents an exhaustive view of the special objects of the different departments of school instruction. Its text are the words of Pestalozzi: "Observation is the absolute foundation of all knowledge. The primary object of education must be, accordingly, to teach the child to observe; the second, to teach him to accurately express the results of his observations." It is a capital discourse that will prove helpful to those who read Spanish.

The Goldsboro, N. C., graded schools have an enviable record. The *Round Table* says:

"Is it claiming too much to assert that the influence of the Goldsboro graded school has been felt and is being felt throughout our state, when from its officers and students it has supplied seven superintendents of other city public schools, two professors of the state normal and industrial school, one of two state conductors of teachers' institutes, a professor of the state university, besides assistant professors at the university and colleges; teachers for city graded schools, and numbers of public and private teachers in many counties of North Carolina? At least 46 of its students have become teachers."

Gov. Greenholme, of Massachusetts, had a good deal to say about the public schools; more than any other governor; possibly more than all the rest. Here are some extracts from his message:

"It ought to be possible for the humblest child in Massachusetts, in any part of the state, to obtain in the public schools the preparatory instruction necessary for admission to the best university or college in the country. \* \* \* Again, has sufficient provision been made for manual training throughout the commonwealth? \* \* \* There is complaint in some quarters that there are not normal schools enough to furnish properly trained teachers, especially for giving instruction in the arts of manual training. Our public schools should, in principles, methods, teachers and equipment, be brought to the highest possible standard of efficiency. \* \* \* Public education is one of the primal factors in the development and advancement of the people. The education of all, by all, for all, is the corner-stone of the commonwealth. \* \* \* Here, upon the ductile and plastic mind of childhood, are indelibly impressed the lessons of equal rights, equal duties, and equal opportunities before the law, and the great duty of patriotic devotion and service to the commonwealth. Other institutions of learning may devote themselves each to its special object, but I firmly believe that the daily association of the diverse elements of the population in the period of youth, their daily common occupation in the same tasks and the same sports, brings together the children of the commonwealth, and unifies them as no other agency can do."

The three points in which the schools of Washington appear to excel are, first, the arrangements for the normal training of teachers. There are fifty pupils in the white and twenty-six in the colored training schools. Both of these schools are models, each in its own peculiar way. Here is seen also the value of a good foundation. The normal school for white pupils was established under the principalship of Miss Lucille Smith, now in Brooklyn, N. Y., and at present is directed by Miss Ida G. Myers, one of the best representatives of the Oswego, N. Y., ideas and methods. The colored normal school was established before the war, by Miss Myrtilla Miner; for several years subsequent was under the excellent superintendence of Miss M. B. Briggs; and since 1883, has been superintended by Miss Lucy Moten; one of the most accomplished normal school principals in the country.

Miss Oy Yoke, a young woman of Chinatown, San Francisco, is trying to obtain a medical education. For three years she has been supporting herself by nursing the sick among her own people. She has made application at some of the San Francisco hospitals, but the other nurses have raised objections, and to prevent trouble the directors have been obliged to bar out the young Chinese girl.

The *Public School Journal*, of Cincinnati, is now a department of the *Suburban News*. The running of an educational newspaper by every city or state is neither necessary nor profitable. There has been more of unpaid for educational editing than of any other kind.

The Socialist students in the Universities of Berlin, Freiburg, Munster, Marburg, and Kiel, for the first time in German university history, have publicly declared their sentiments by sending an address to the International Congress of Socialist students at Geneva. They also intend to send a delegate.

Two men were at a hotel in Iowa; one was a book agent, the other a principal of a school; they were attending the State Association. Picking up an educational paper, the principal said:

"It makes me tired to see the manner in which these papers are run."

"I s'pose," said the other, "that you could give 'em all points that would make 'em hum."

"Of course; so could you."

"No, don't think I could."

"Do you mean to say that you couldn't run this paper better than it is?"

"That's the conclusion I have come to."

"Well, I must say there are not many like you."

"I know it. I used to be like you are. But I tried to run one myself, and so I know how it is. I wish I had my money back again."

Could Washington now revisit the beautiful metropolis that bears his name he would see that his original idea of a national university has already been more than realized. Indeed Washington in itself has already, at the end of the first century of its existence, become a magnificent university. With its flourishing system of common schools; its two colleges of established reputation, and with the great Catholic and Methodist universities promised in the near future; Howard university with its various departments, with other institutions of high grade for colored students; a fair supply of private, academical, and parochial seminaries; the magnificent National library, flanked by vast scientific collections; the group of distinguished scientific men and experts of various kinds in the government service; the National Bureau of Education; the proceedings of Congress and the Supreme Court of the nation; the peculiar interest of its representative social life, in which the American ideal of a first society is best represented; the absence of overpowering material interests, which make Washington the one city in which the higher interests of man everywhere present themselves, first and foremost; here is the beginning of a great metropolis, if a university, of which the grandest outcome may safely be, as the years go on.

### Brooklyn.

James E. Ryan, principal of public school No. 26, died Jan. 13 of heart disease. He graduated from the Albany normal school, in 1854, and soon commenced to teach in Brooklyn; after ten years of services as an assistant, he became the principal of No. 26, and had just completed his twentieth year of work in that important position. He had taken a course in the Columbia College law school, and was an authority in music. His first wife was a Miss Adalaine Gregory, of Albany.

The Kings County Tonic Sol-Fa Association, Brooklyn, N. Y., has made it its aim to bring a knowledge and general use of vocal music into the homes of the people; and to enlist parents in the movement for introduction of graded instruction in vocal music in all schools. Mr. John J. Dawson, the supervisor of its school of music is a staunch believer in the use of music for ethical ends.

# Teachers' Association Meetings.

## New York Art Teachers.

The New York State Art Teachers' Association held its second meeting January 5 and 6, at Art Association Hall, Brooklyn. Mr. E. C. Colby, of Rochester, president of the association held chair.

*Jan. 5.*—Dr. Walter L. Hervey, president of the Teachers College, New York city, spoke on "Aspects of Manual and Art Training." After pointing out the evils of intellectualism in the public schools, he argued that it was through the ethical spirit and the art spirit that headway must be made against these evils. "Manual Training," he said, "is a working out of the ethical spirit, and drawing, and all that drawing involves and leads up to, is an evidence of the art spirit." "Drawing and Manual Training," he continued, "should both be permeated by the art spirit. In the development of the modern school, intellectual training was the earliest end sought, so much so that there came a gap between the school and life. The schools were not practical. Manual training came as a link between the modern school and the needs of modern life. Manual training is thus the out-growth primarily of industrialism and develops the practical side, i.e., the will side. A third tendency is now apparent; and the most lasting result of the World's fair upon education is likely to be its emphasis upon the art spirit in education. This means above all the culture of the feelings. It means that every one is to come into touch with beauty and so be enabled to do finer work whatever his station or work may be."

Dr. Hervey was followed by Mr. Henry T. Bailey, state supervisor of drawing in Massachusetts, who gave an interesting and practical talk on "Original Design in Grammar Grades." Mr. Bailey illustrated his talk with drawings, pressed flowers, and blackboard sketches. He said, "The pupil must find in historic ornament his types of beauty; in nature his suggestion and inspiration; and in the study of both nature and ornament his guiding laws and principles." \* \* \* "If we can lead our pupil to love beauty, in decorative art; to know good ornament, and to reproduce lovely forms, we have secured good results, even though he never produces an original design."

After a brief intermission the association listened to a stereopticon lecture on "Fra Angelico and the Uses of Color in the Expression of Purity in Art" by Miss Louise Booth-Hendriksen, Brooklyn institute lecturer on the history of art.

In the evening the members and friends of the association were invited to inspect the classes at Pratt institute. The teachers of the Art Department acted as guides.

*Jan. 6.*—The morning program began with a paper on "The Relation of Art to General Education," by Mr. Solon P. Davis, supervisor of drawing, Hartford, Conn. Recent movements in education in this country bearing on this point were discussed. "The Consideration of Method and System," said Mr. Davis, "is becoming subservient to a study of the child, his innate powers, and the experiences best calculated to develop a well rounded life." The paper was a plea for art training as a part of a general scheme of education on the ground of its universal utility in three lines, industrial, mental, and moral; dwelling especially upon the latter.

Mr. Chas. R. Richards, of Pratt institute, followed with a paper on "Lessons of the Chicago Exposition as Affecting Manual and Art Education." He illustrated his paper with exhibits of manual training work from Pratt institute; Teachers College, New York; Eliot School, Jamaica Plain, Mass.; Rice School, Boston; and the public schools of Springfield, Mass. The paper was mainly a review of the manual training exhibit at the fair, pointing out some of its leading characteristics showing what has been accomplished already in manual training and indicating what may reasonably be expected in the future. Mr. Richards noticed the general similarity of high school courses and the great diversity in grammar school courses, "both in the form and methods of execution and the principles followed." He spoke of the difficulties in the way of the solution of this problem in grammar grades, but recognized that in these grades the pupils were "most susceptible to the disciplinary influence of manual training." "The most fundamental differences represented by the exhibits from those grades is a difference of attitude towards the manner of introducing the subject into the school"—on the one hand the separate shop apart from the other school-rooms, on the other the utilization of the regular class-room and the ordinary desks with desk covers for the work. After discussing this difference he said, "The plan of bringing the work into the regular class-room not only saves expense at the outset, but it allows a system to be developed free from all the restricting influences of the shops and consequently likely to be a truer adaptation to the needs of the pupils."

Mr. Walter S. Goodnough, supervisor of drawing in Brooklyn, read a paper answering the question "What Should be Included in a High School Course in Drawing?" It was full of practical

suggestions illustrated by a large number of drawings from Pratt institute and from the Columbus, Ohio, high school. An abstract will be given in a later issue of THE SCHOOL JOURNAL.

The election of officers resulted as follows: President, E. C. Colby, Rochester; vice president, W. S. Goodnough, Brooklyn; secretary, Miss Maria P. Bockee, Poughkeepsie. Other members of the executive committee, Mr. and Mrs. J. F. Hopkins, of Brooklyn, and Miss Helen E. Angell, Geneseo.

The summer meeting will be held in connection with the New York State Teachers' Association at Saratoga.

## Montana School Superintendents.

The meeting of the county superintendents at Butte City, December 28, shows that Montana is rapidly progressing in her educational work.

State Supt. E. A. Steere presided. He presented for discussion "Teachers' Examinations and Certificates," taking for his text the gist of the bill prepared by him for the legislature. He proposed to have the laws so amended that county certificates should be issued by county superintendents, and continue in force respectively for one, two, and three years, according to standard of scholarship. The examination for a *third grade certificate* should include reading, writing, orthography, arithmetic, geography, English grammar, history of the United States, *theory and practice of teaching*, civil government of the United States and Montana, and physiology and hygiene. The examination for a *second grade certificate* should include all the foregoing branches and also grammatical analysis, physical geography, and elementary algebra. The examination for a *first grade certificate* should include all the foregoing branches and also American literature, natural philosophy, and geometry.

First grade certificates shall be good for three years, and can only be issued to persons with not less than twelve months' successful experience in teaching. Second grade certificates shall be good for two years, and third grades for one year, and no certificate shall be issued to any person under the age of 18.

A lively discussion followed the forcible address. Among those who participated in it were Supt. Harmon, of the city of Bozeman, Supts. W. J. Oliver, of Madison, Miss Minnie Reifenrath, of Lewis and Clarke, Mrs. Rightenour, of Jefferson, and J. M. Kay, of Gallatin Co.

Miss Reifenrath's paper on "Grading Rural Schools and Official Visits" was discussed by Miss Coffin, superintendent of Beaverhead Co., and others. The subject was treated under three heads, viz., visits, criticisms, and course of study.

The paper of Miss Harriet Hord, superintendent of Missoula county, was particularly well received. It gave a thoughtful, clear, and comprehensive view of the subject of "Needed Legislation." Here are a few extracts:

"To begin at the beginning, the state superintendent should be the head in fact as well as in name of the state educational system, having full authority and power to govern and control the entire state educational system. County superintendents, trustees, clerk, and teachers should be members of a closely joined federation, having for its purpose the perpetuation of our glorious republic.

"The man occupying the position of state superintendent of such a system should be compelled to have qualifications of the highest order, in fact, the qualifications should be made such that it would be impossible to nominate any but men competent for the position."

"Foremost among the duties of the state superintendent should be the preparation of the questions used in the examination of teachers. I think it would be well if in addition to the preparation of the questions by the state superintendent or the board of education, the answers of applicants throughout the state were passed on by the same person or persons or by a committee appointed for that purpose."

"The qualifications of trustees and clerks should be clearly defined. Arrangements should be made whereby correct reports from school clerks may be secured. Why not have no orders for their compensation allowed until the county superintendent certifies to the county treasurer that correct reports have been received from them? Board meetings should be made the only legal way of conducting school business."

"The qualifications of the county superintendent should be but little less, if they are any less, than those of the state superintendent. It should be required that they serve as intelligent subalterns in carrying out the directions, rules, and regulations of their superior officer."

"No legislation is possible that will make the county superintendent's work more effective than a speedy manning for active work of the State normal school and the State university. The results sought in the schools would be much better and more quickly attained if every school was presided over by a well-trained, thorough, normal teacher."

"The arrival of that time is a consummation devoutly to be hoped for, but until then arrangements should be made for the training of the forces at our disposal, and I know of no more effective way to accomplish this than the enactment of laws providing for a liberal amount being set aside for the employment of competent institute conductors."

"The compulsory school law should be so amended as to be made effective. If the state can collect a tax for school purposes it can certainly require the attendance of children between certain ages to reap the advantages of the tax."

Several other topics of special interest to Montana superintendents came up for discussion.

The superintendents' meeting was followed by that of the educational council. President James Reid, of Deer Lodge, presided.

### Kentucky.

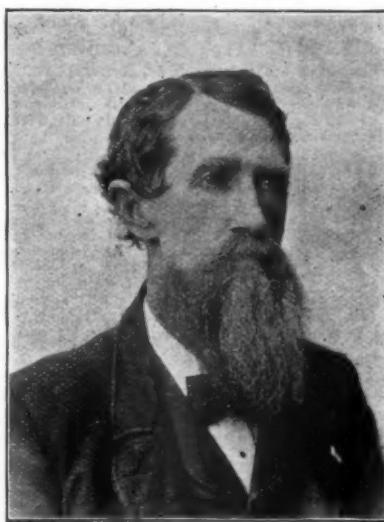
#### SCHOOL SUPERINTENDENTS.

The County and City Superintendents' union of Kentucky held its third annual meeting at Louisville December 27, 28. Supt. J. L. Reeves, of Buckner, opened the session. Prof. A. L. Peterman, of Lexington, was chosen chairman, and Prof. Edgar H. Mark, of the Louisville high school, secretary.

Prof. McHenry Rhoads, of Frankfort, spoke on recent legislation affecting school interests. Mr. Peterman gave an address on "What we Need at the Hands of the Next Legislature." He did not approve of the practice of considering a county certificate as a state diploma.

Prof. W. C. Warfield, of Covington, stirred up a lively discussion with his talk on "The Relation of the Teachers' Agency to the County and City Superintendents." Several of the teachers' agencies were severely criticised.

Supts. W. T. Drury, of Webster, John W. Martin, of Hancock, and B. G. Gardner, of Hart county, discussed the compensation of the county superintendent.



State Supt. ED. PORTER THOMPSON, of Kentucky.

"The Grading of Common Schools" was also a subject of discussion. The efforts of State Supt. Ed. Porter Thompson to grade the schools and have them adopt a uniform course of study were commended.

Mrs. Munnell spoke on the necessity of scientific temperance teaching.

The three most important of the resolutions adopted were:

1. That county certificates should be valid only in the county in which they are issued; that certificates of the third class should not be issued more than twice to the same person, and the holder thereof should not be authorized to teach in a district having more than sixty pupils; and holders of second class certificates should not be authorized to teach in a district having more than eighty pupils.
2. That there should be at least two professional teachers on the state board of education.
3. That we believe a system of training-schools for teachers should be organized, and we respectfully ask that the legislature soon to assemble pass some such measure as the one before the last legislature looking to this end.

### Iowa.

#### GENERAL ASSOCIATION.

After the customary words of welcome and response Pres. Frank B. Cooper, of Des Moines, delivered his annual address. The committee appointed last year to inquire into the facilities for the training of teachers recommended that the pedagogical department of the state university be placed on an equal footing with the other departments. The rest of the report read about as follows:

"With 25,000 teachers affecting in their work every household, we find ourselves with facilities for teaching utterly inadequate to meet the growing needs of this great commonwealth. While the more progressive educational states boast of from three to fourteen state normal schools amply

equipped for every need, Iowa has only one supplemented by a chair of pedagogy in the state university.

A visit to the state normal school has revealed classes overcrowded, having double the number of students for whom the best work could be done, laboratories indifferently furnished, instructors overworked, students clamoring for added advantages. A new building is absolutely essential to satisfy even the demands of the present attendance. At least six instructors should be added. A more fully equipped laboratory and library must be furnished if the school is to fulfil its mission of usefulness. There is also a crying need for other institutions of similar character throughout the state.

"Value of Expert Criticism" was the subject of a paper by Supt. H. C. Hollingsworth, of Albia. He spoke of the small proportion of people who are willing to accept criticism, most people desiring to be flattered at whatever cost. The subject was handled in a masterly way.

(To be continued in a later issue of THE JOURNAL.)

### New York Schoolmasters.

The Schoolmaster's Club, an organization of the principals and teachers of New York city and vicinity, held the first meeting of the present year at the St. Denis hotel on January 13. A paper on "Needed Changes in Our City Systems," by Commissioner Crawford, was the event of the evening.

Mr. Crawford, considered arithmetic a fetish receiving a disproportionate amount of the time and energy in the schools, and thought instruction in English to be of far more importance and as worthy of much of the energy wasted at present in the solution of arithmetical puzzles that have no practical value.

He also advocated specialization in the grammar grades. Instead of having one teacher present fourteen different subjects to his class, he would have one teacher present *one* subject to all the classes of the department. He favored the idea of giving a greater amount of science study in grammar and primary schools as a means of mental training. By concentrating the efforts of the teacher on one subject, the interest of pupils would be more readily secured. The methods of putting the plan in operation should be left to the class teachers themselves, not the school boards or superintendents.

An animated discussion followed. A Brooklyn principal suggested that the graded system might be improved if the superintendents were not so anxious to impress upon the subordinates their own greatness and wisdom. They should examine a class and judge a teacher with the aim of finding out what the child knew; a Jersey principal who had tried the special teacher plan found it successful in grammar grades. However, he had observed one defect. Specialization had a narrowing influence upon the teacher. He doubted too, whether the schools would always find teachers in its corps adapted to the special work they might be called upon to do. However he admitted Mr. Crawford's claim that the weak teacher's defects could be more readily discovered and remedied under the system.

A "specialist" who had formerly been a "generalist" corroborated the testimony as to the narrowing influence of special teaching.

Another principal had made the discovery that premature introduction of science study robbed the subject of its freshness and interest when taken up thoroughly at a later period in the high school.

A N. Y. principal thought that the value of English and its necessity for success in life was overrated; he noticed in the meetings of school boards and superintendents, ample evidence of the fact that ignorance of the English language did not debar a man from success.

The discussion was brought to a close by the testimony of a teacher in the N. Y. system of the success of an actual trial of specializing the work among the teachers of the highest grade. He admitted that the success of the experiment might be due to the fact that each teacher had always had a predilection for the subjects placed in his charge and also to the fact that each teacher was responsible for the general order and efficiency of one-third of the class. His experience as a special teacher in drawing proved the value of securing uniformity in method and development, and to the saving of the time grade teachers would have wasted in finding out what the scholars knew and could do. The great danger was not so much in the narrowing influence of specialism upon the teacher as in narrowing the influence of the teacher of 800 pupils upon the individual pupils; every one would admit that the highest value of the teachers he had had was often not in the amount of knowledge they gave; it was in the moral influence produced by the influence of the teacher's personality.

The idea that pupils should only learn what was of practical value in earning his bread, he characterized as an un-American theory. There are higher ideals of life than the earning of one's bread and no one had the right on the score of practical utility to rob a boy of the opportunity of becoming acquainted with the master minds of English literature or the wonderful developments of modern science.

In regard to the proper teaching of science, no one would deny its value in primary and grammar grades. The difficulty would be in finding enough teachers trained in modern science methods to apply them in the 240 schools of the city.

## Correspondence.

### A Misstatement.

A number of Brooklyn teachers have been under the impression that the specialty system is to be adopted and made obligatory next term in this city. A statement that appeared in THE SCHOOL JOURNAL of December 23 tended to confirm this impression. It is not true, however. What was really passed by the board of education was a resolution to the effect that at the option of the principals teachers might keep their classes two successive terms instead of one.

BROOKLYN.

### That "64-65 Puzzle."

This from THE SCHOOL JOURNAL of Nov. 25.

"The following curious puzzle beats the celebrated '13-15-14,' and is well worth investigation. Take a strip of paper or cardboard thirteen inches long and five wide, thus giving a surface of sixty-five inches. Now cut this strip diagonally, as true as you can, giving two pieces in the shape of a triangle. Now measure exactly five inches from the larger end of each strip and cut it in two pieces. Take these slips and put them into the shape of an exact square, and it will appear to be just eight inches each way, or sixty-four square inches—a loss of one square inch of superficial measurement, with no diminution of surface. The question is, what becomes of that inch?"

But the author of this "curious puzzle" seems to have overlooked the fact that the pieces thus cut, cannot be put in "the shape of an exact square."

Let ABCD be a rectangle, 3 by 13 inches. Dividing the figure according to the instructions above, we have the line AE = 5 in., and EB = 8 in. Also, AD : AB :: EF : EB, and substituting, 5 : 13 :: EF : 8; whence, EF = 3 1-13 in. The line HG will also be 3 1-13 in.

Re-arranging the piece we have Fig. 2, with the line AD = 5 in., DH = 3 1-13 in., and their sum AH = 8 1-13 in. The sum of AE and EG, which is the side AG, also 8 1-13 in. But the side GL = EB in Fig. 1, and is therefore only 8 in.; hence, the figure is not a square for its sides are not equal. The rectangle ECHA, is  $5 \times 1-13$  in.; the rectangle GLCE is  $8 \times 1-13$  in., and the sum of their areas is 65 sq. in., there being none lost.

WILL SCOTT.

[We frequently congratulate ourselves upon our careful readers. If there is a mistake in THE JOURNAL they unfailingly discover it and write to us. "The 64-65 Puzzle" has "gone the rounds" for some time and was admitted into our columns in good faith and without testing. It is to be hoped that our young people have by this time racked their brains over it, and made the discovery given above by Mr. Scott. If not, it is not too late for teachers to use it as a thought awakener. It will help to convince them that there is no such thing as annihilation in nature.—ED.]

### Arithmetic.

I recently saw a class of eight to nine year old pupils add columns of figures like accountants and I pitied them.

I saw some arithmetic examination questions for pupils, who were in fourth year of school and here are parts of two of them.

Number 1. Write and add ninety millions, three hundred and seventy thousand, seven hundred and sixty; four hundred and eight thousand and two; nine millions, nine thousands and nine; seven hundred and three millions, eight hundred and seventy thousand, six hundred and thirty-seven and so on including in all ten similar numbers.

Number 2. From 100000, take 90807.

I pitied the pupils, who were to try and answer these questions. How much mental power would be acquired by exercises in such figure gymnastics!

What a waste of time and energy was here!

How much thinking or reasoning did they have to do? How many had any comprehension of what the numbers meant? What kind of a mental picture, would these numbers procure in the minds of those pupils? What a chance for original thought and acquisition in such a test!

I saw a test of five questions, given by the principal of a large school to fourth year pupils of which the following are two examples.—

1. Divide 7506 392 156 by 693 75?

2. Multiply 496 759 209 by 176 94.

I asked him his objection in giving such examples.

He said to test the pupils' ability to concentrate their thought for a length of time. I felt like saying about concentration what Mr. Vanderbilt said about the public; if that was the way to acquire it.

The value of the following problems, taken from the beginning of the third year in school, compared with the foregoing, is to my mind unquestionable.

No. 1. Henry's father gave him seven nickels to mail nine letters and buy twelve postal cards; how much money had he left?

No. 2. Mary had a quarter to mail 8 letters; how many postal cards could she buy with the remainder?

No. 3. How many pencils can I buy for 28 cents, if one pencil costs as much as 4 postal-cards?

No. 4. How much must I pay for 12 rubbers; if one pair costs 17 cents,

No. 5. A square lot measures 15 ft. on one side, how many yards around

CLARENCE S. GIFFIN,  
Newark, N. J.

Are there books describing the new method of teaching reading used in Brooklyn, N. Y.? Is there a primer in which the method is applied?

ALICE E. BLOOMFIELD.

Silver, Burdett, & Co. announce that they have in press the first book of the series. It will be ready about April 1. In all places, therefore, where a new school term begins in January or February, the book will be available for that term; i. e., it will be ready before the completion of the preliminary blackboard work with which most modern instructors now begin the teaching of reading.

For the benefit of those who may desire to use the book, and to shape their work from the beginning of the term accordingly, the following list of sight-words, contained in Part I., is given as the

material to be employed in the preliminary blackboard work above referred to:

a, ail-s-ing, all, am, an, and, any, apple-s are, at, boy-s, bread, can-s, come s, cow-s, do-es-ing, dog-s, drink-s-ing, eat-s-ing, egg-s, for, fruit, full, girl-s, give-s, go-es-ing, good, has, have, he, her, here, him, I, ill, in, is, it-s, Jack-s, let-s, like-s, look-s-ing, make-s, me, milk-s-ing, much, no, not, of, old, out, play-s-ing, see-s-ing, shall, she, some, take-s, tell-s-ing, that, the, them, there, they, to, too, us, want-s-ing, water-s-ing, we, well-s, what, where, will-ing, with, yes, you.

The words in this list (without counting inflections) number seventy-seven. As determined by Prof. Ward's observations in many Brooklyn schools, they should be successfully taught and read in script blackboard sentences in from six to ten weeks, at the expiration of which time the books should be placed in the children's hands and the transition made from script to print. Phonetic reading follows, under the directions carefully given in the teacher's manual that is to accompany the book.

The publishers will be prepared at the beginning of the coming term to supply Set I. of the Phonetic Cards, containing the phonograms used in this reader. One side of each card will bear a script phonogram, the other, the same phonogram in print. The script phonograms are to be used for daily class drills during the preliminary script blackboard work, and both the script and the print phonograms during the reading of Part I. of the book.

Mr. Lucien H. Smith, in a lecture before the People's Ethical Society of Rochester on "The New Education," says:

'The New Education' means, essentially, *new teachers*. Rousseau exclaimed, 'How can a child be properly educated by one who has not been educated himself?' Of course, the old teachers are opposed to 'fads'; just as the workman is opposed to the machine that deprives him of employment. But those teachers who are natural teachers have this advantage; they can prepare for the coming storm. They have had sufficient warning. Unfortunately for themselves and their innocent pupils many have mistaken their calling, and with a proper system of normal training would never have been permitted to teach.'

"There are three schools that I wish to speak of as ideals, so far as the application of principles is concerned: Those of Montclair, N. J., Felix Adler's school, New York City, and the State Industrial School of N. Y. in Rochester.

Of the many aspects of progress presented at the Fair none, perhaps (unless it were the Congress of Religions), exceeded in impressiveness the World's Congress of Representative Women. This congress held seventy-six sessions at which were heard more than six hundred speakers. The total attendance was nearly two thousand. Mrs. May Wright Sewall, the chairman, is editing a report of this magnificent manifestation of feminine energy. It will of course compile the utterances of the world-wide representation of woman's cause which occupied its platform. It will appear in two good-sized volumes, carefully indexed. These two volumes will be bound together at \$3.50 or issued in two separate books for \$5.00. Orders may be sent to Clarence E. Young, P. O. Drawer 682, Chicago, Ill.

One need not have a very long memory to recall the reviling that was heaped upon the pioneer advocates of "women's rights." The patient and venerable face of Susan B. Anthony bears eloquent traces of those days when it was considered unseemly for woman to "speak out in meetin'." Under the doctrine of St. Paul, woman had suffered in silence through the centuries, her manifold discontents relieved only by the impotent curtain lecture. In the persons of a few devoted individuals she broke through her traditional trammels not much more than a quarter of a century ago, and won the public ear. She has gained in efficiency as a public worker as rapidly as she has gained in freedom, and wonderful has been the result.

### Leading Events of the Week.

Admiral Da Gama, the Brazilian insurgent, says he is waiting for help. The return of Admiral Mello to Rio Janeiro harbor, without reinforcements seems to indicate that the revolutionists cause is doomed. It is said the end of the war is close at hand.

—Disturbances continue in Sicily. King Humbert has sent a manifesto in which he appeals to the patriotism and local pride of the Sicilians, recalling the sacrifices they made for Italian unity, and hoping that the same sentiments survive. It had a good effect.—The nomination of Mr. Hornblower for justice of the United States supreme court was rejected by the senate.—The Wilson tariff bill was debated in the house. It is said the Democrats are practically unanimous in its favor.—Vaillant, the French anarchist bomb-thrower, was convicted and sentenced to death.—Secretary Carlisle, says the treasury is in need of money, and Congress must find some means of furnishing it.

A rear-end collision occurred on the D. L. & W. railroad between Newark and Hoboken. About a dozen persons were killed, and a large number injured.

To cure scrofula, salt rheum, dyspepsia, catarrh and rheumatism, take Hood's Sarsaparilla.





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A RURAL SCENE.

### Tropical America.

It is desirable that the pupils should be made familiar with the fact that while snow and ice cover the ground at the north, the southern part of the United States is flooded with sunshine. It is a good plan when the snow beats against the window, to say : "Why, if we were in Florida now, we could pick oranges off the trees. I have no doubt the boys and girls as they go home from school can pick oranges from the trees." In this way, they become acquainted with the fact that in the tropical part of the country it is warm and pleasant, even when it is winter in the north temperate zone.

Again, it is likely that some child will bring an orange or a banana to the school; these may be used for object lessons. Where did the orange come from? Why do they not grow here at the North? What kind of weather do they need? Can they endure the frost? "No." In what part of our country do oranges and bananas grow? "Florida, mainly." What other tropical fruits? "Guava persimmons, lemons, and limes." What trees that we do not have?

The scenes depicted in the two cuts are indeed charming. They are on the line of the Florida Central and Peninsular railroad which extends from Jacksonville to Tampa, almost the entire length of the state, with numerous branches. The courtesy of the officials of this fine road enables us to use these cuts; they are new and attractive. One is of a hunting scene; in some parts of Florida the best hunting is found; the writer remembers seeing a deer leaping among the trees bordering Lake Worth. The other is a lovely rural scene.

These cuts unfold the fact that this interesting portion of our coun-

try offers an asylum for those who are unable to stand the rigors of our northern winter. Last year leaving New York in the morning when all the streets were blocked with snow, Florida was reached the next evening and the people were found sitting on piazzas and using fans! Many teachers have sought Florida for a permanent home when disabled. Along the Florida Central and Peninsular railroad are numerous charming towns and villages.

The houses are usually surrounded with orange trees; roses are blooming all the year long, while the tall and stately pine tree is found everywhere; the palm in some of its various forms is everywhere to be seen. The luxuriance of the foliage is something that one finds it hard to become accustomed to.

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All these requirements and others have been met by the large and able corps of editors and contributors who have helped to make the *Standard Dictionary*. We have not space to give the entire list, which is a long one. The dictionary was compiled under the direction of I. K. Funk, D. D., as editor-in-chief; F. A. March, LL. D., L. H. D., as consulting editor; D. S. Gregory, D. D., as managing editor, and John Denison Champlin, M. A., Rossiter Johnson, Ph. D., and Arthur E. Bostwick, Ph. D., as associate editors. Under this very able corps, specialists in all departments, such as law, economics, finance, statistics, astronomy, physics, meteorology, zoology, botany, anatomy, biology, bacteriology, geology, chemistry, mineralogy, electricity, anthropology, religion, architecture, etymology, history, heraldry, art and architecture, music, literature, pedagogy, military and naval terms, etc., have given the results of their studies in their several fields.

The editors have endeavored to make it a complete and a popular work of reference. Among its distinguishing features we may mention the following: 1. The etymology is placed after the definition. This is in order to make prominent the information sought after by most people. However, the etymology, the information sought after by scholars, has not been neglected. 2. In the definition of words, the most common meaning is given first; that is, preference is given to the "order of usage" over the historical order so generally followed heretofore in dictionary-making. In making this arrangement the editors bore in mind that the average man goes to a dictionary to find one or more of these things about a word—its correct spelling, its correct pronunciation, or its most common present meaning. This is to save the time of those who consult the dictionary and to render it absolutely certain that the information most in demand may be easily found. 3. The scientific alphabet, which has been prepared and recommended by the American Philological Association, and adopted by the American Spelling Reform Association, is used in giving the pronunciation of words. 4. The quotations used to verify or illustrate the meanings of the words are located;

that is, not only in each instance is the name of the author given, but also the book and page, and the edition from which the quotation has been taken is indicated. This branch of the labor alone has been a herculean task, as the dictionary will contain about 50,000 quotations. 5. Disputed pronunciations and spellings are referred, under the direction of Professor March, to a committee of fifty philologists in American, English, Canadian, Australian, and East-Indian universities, and representative professional writers and speakers in English. 6. If a word is pronounced variously, the first pronunciation given is the one preferred by this work, and this is followed by the pronunciations preferred by other dictionaries. 7. The pictorial illustrations are all (nearly 5,000 which the complete dictionary will contain) made expressly for this work; over 4,000 of these will be in wood, and some will be full-page groups in colors, made by the Messrs. Prang, and will be true works of art. 8. An important and difficult department, that of the compounding of words was entrusted to Mr. F. Horace Teall. His labors have been directed towards bringing order out of the confusion that has existed in the joining together of words. All editors, printers, and proof-readers know that this was a work that was greatly needed, and as Mr. Teall has followed scientific principles in forming compounds, it is believed that his efforts will have much to do in securing uniformity in practice. 9. In its effort to help simplify the spelling of words this dictionary is conservative, and yet aggressively positive, along the lines of reform agreed upon almost unanimously by all the leading philologists of America and England. 10. Obsolete, foreign, dialectic, and slang words are given places only if likely to be sought for in a general English dictionary.

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A valuable book on sloyd by one of the best teachers of this branch in this country, Principal Gustaf Larsson, of the Boston sloyd training school, has been issued under the title of *A Text-Book of Working Drawings of Models in Sloyd Adapted to American Schools*. The book presents a plan of the mechanical drawing of the sloyd models, which are based on educational principles briefly stated as follows: 1. The progression of the exercises should be such as to secure constant and proportionate development of mind and body, 2. Exercises should be so arranged that each model will prepare the way for the next, both physically and mentally. 3. Exercises should always result in a finished article of use. 4. The proportions and outlines of the models should be such as to educate the aesthetic sense, and the construction simple enough for the child to reproduce in drawing. 5. The models should admit of a judicious variety of form. 6.

The work should be of such a character as to admit of the best hygienic conditions. The positions assumed in tool-work should counteract, as far as possible, the ill effects of long hours of sitting in school. The course laid down in his book is four years (at least two hours weekly), the first year work being called "Preliminary Sloyd." The models represent simple elementary forms. The exercises are represented in fifteen models. Both tool-work and drawing increase in difficulty as the work progresses. The second year exercise gives thirteen models, the third year eleven, and the fourth year seven models. A progressive course in mechanical drawing, apart from tool-work, with illustrations of objects and brief directions, is given in the appendix. We have no doubt this course will be found as valuable in other schools as it has been in Prin. Larsson's school. (Published by the Sloyd training school, Appleton street, Boston.)

*My Saturday Bird Class*, by Margaret Miller, is a little book the object of which is to show how children may be interested in the study of the common birds. The birds described are the robin, bluebird and sparrow, swallow, woodpecker, wren, screech-owl, cuckoo, bobolink, meadow-lark, etc., nearly all of which are found all over the United States. The information is imparted in the form of bright descriptions and familiar dialogues. The text is illustrated with numerous pictures of birds; also a diagram showing the principal parts of a bird. With the aid of this book a satisfactory beginning in bird study can be made. No more interesting study for children can be found. (D. C. Heath & Co., Boston. 30 cents.)

The book on *Heat*, by Mark R. Wright, is intended for those who have read the elementary parts of the subject as treated in the same author's *Sound, Light, and Heat*, or who are able at once to attack a more advanced work. It is an attempt to place the leading facts and principles of the subject before the student. The writer has written from the point of view of the teacher, which will explain why certain portions of the subject are more elaborately treated than others. The examples that are presented should be carefully worked out if the student wants to receive the greatest benefit possible from the study. A fair proportion of the experiments described also should be performed, though the author acknowledges that laboratory practice under certain conditions may be about as bad as exclusive study of the text-book. Reference has been made to the work of recent experimenters where the results could be incorporated in a book of this design. The book is an excellent one for those who wish to go deeper into this important subject than the elementary text-books take one. (Longmans, Green & Co., New York.)

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Dr. Edward H. Magill, ex-president and professor of French in Swarthmore college is the author of a remarkable series of textbooks on French, the object of which is, primarily, to give a reading knowledge of that language. There is a grammar written by Dr. Magill and a series of works by such authors as Francisque Sarcey, Madame De Witt (*nee* Guizot), and others, edited and annotated by him. They are published by Christopher Sower Co., Philadelphia. Brooks' Mathematical Series, another collection of standard books, embraces every mathematical step from primary arithmetic to spherical trigonometry. These books are worthy of a careful examination.

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